

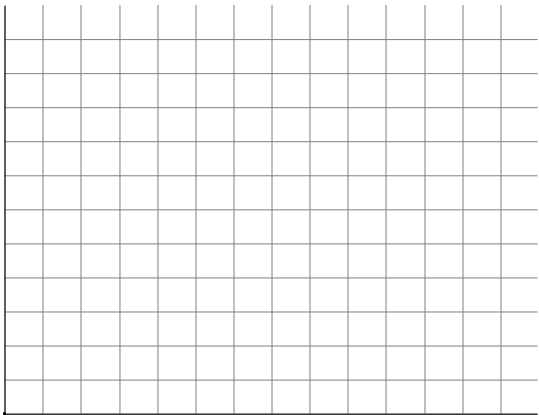
Data Management

6

Create a bar graph for the population data. Select an appropriate scale.

1990 Population Density by State
(population / square mile)

Alaska	1
Georgia	112
New York	381
Florida	240
Nebraska	21



1

Identify the population you would sample for an opinion on each topic.

- a) Bus fares for the local transit system.
- b) The taxes on gasoline in Canada.
- c) The provincial sales tax.

2

A web site for a television station asks opinions regarding viewer's favorite shows. Do you think the results are reliable? Explain.

3

A publishing firm wishes to maintain a high quality of textbooks. Describe the type of sampling that could be used by the publishing firm.

4

Describe how you would obtain a systematic sample of grocery shoppers.

5

A survey is conducted to find out how people feel about the gasoline prices changing frequently. One survey question asked:

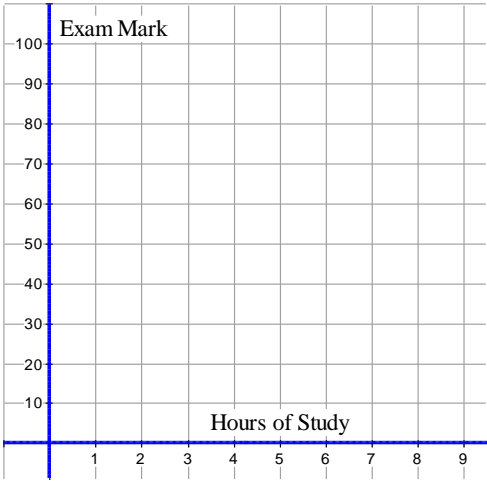
"Do you think gasoline companies increase their prices on Thursdays and Fridays to make more money?"

Describe some flaws in the question and suggest an alternative question.

7

A science teacher wants to know if her students marks for an exam are related to the number of hours study. The data is collected and summarized in this table.

Hours of Study	Exam Mark
4	88
1	71
4	87
1	80
0	68
2	80
3	75
0	58
2	84
3	90
3	93
1	74



- a) Draw a line of best fit.
- b) What type of correlation is shown?
- c) Use the graph to approximate the equation of the line of best fit.

I should be able to

- collect, analyse, and summarize two-variable data using a variety of tools and strategies, and interpret and draw conclusions from the data;
- demonstrate an understanding of the applications of data management used by the media and the advertising industry and in various occupations.

Vocabulary

Test Correction Notes

8 The table below shows the heights of the six tallest mountains of the world in thousands of kilometers. (Source: The Ultimate Atlas, 1990)

Mountain	Height (in kilometers)
Everest	8.848
K2	8.611
Kanchenjunga	8.598
Lhotse	8.511
Nanga-Parbat	8.128
Annapurna	8.078

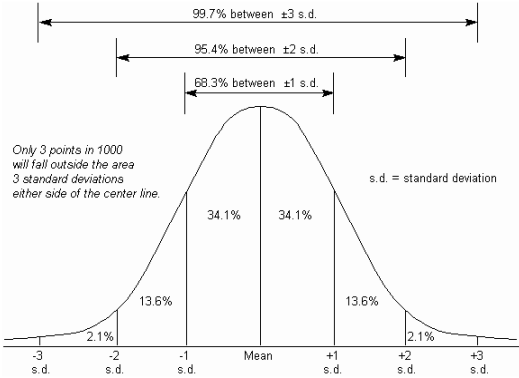
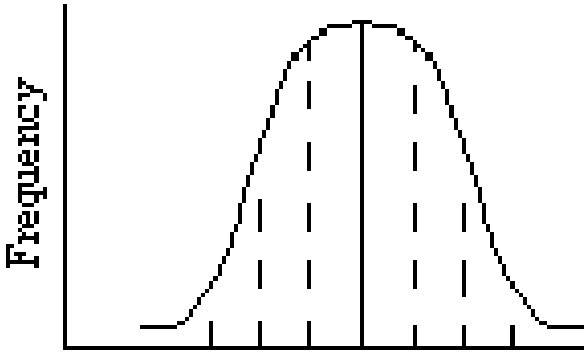
a) What is the median height of the six mountains?

b) What is the standard deviation to the nearest tenth of the height of the six mountains?

9 A quality control inspector weighs 50 different bags of candy. The frequency table is given below. Calculate the mean, the range, the variance, and the standard deviation for the data.

Mass of bag (g)	Frequency
46	2
47	8
48	10
49	15
50	8
51	7

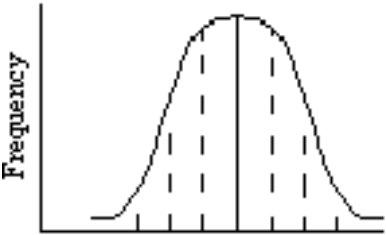
10 The results of a test were normally distributed with a mean of 67% and standard deviation of 5%. Sketch the normal distribution of marks. Label the mean, and the marks that are 1, 2, and 3 standard deviations from the mean.



11 Petroleum barrels are filled with a mean of 46 gallons and a standard deviation of 0.7 gallons. What percentage of barrels contain at least 45.3 gallons?

12 Auditory tests are conducted on many children at a young age. The mean score for the test is 380 with a standard deviation of 35.2. Children are considered to have hearing impediments if they score 2 standard deviations below the mean.

Sketch the normal distribution; label the mean and the points that are 1, 2, and 3 standard deviations from the mean. Shade the area where children are considered to have hearing impediments



13 The table below shows the expected years remaining in a person's life given a person's current age.

Current Age (years)	1	5	10	20	30	40	50	60	65
Expected Years of Life Remaining	75.2	71.3	66.4	56.7	47.3	38.1	29.2	20.9	17.3

a) Find an equation for the line of best fit for these data. Let the independent variable be the current age in years.

b) Use the line of best fit to find the expected years of life remaining for a person whose current age is 70.

14 The table represents the number of working women as a percent of the total work force.

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998
Percent	43.5	43.9	44.1	44.3	44.4	44.6	44.8	44.7	45.0

Graph the data and determine the equation for the line of best fit. Use the equation to predict the percent of the work force in 2020 that will be made up of women.

15 The volume and mass of an unknown substance were measured and tabulated below.

Volume (cm ³)	Mass (g)
10.0	6.8
10.5	7.1
11.0	7.5
11.5	7.8
12.0	8.2
12.5	8.5
15.0	10.2
17.0	11.6
19.0	12.9
21.0	14.3
23.0	15.6
25.0	17.0
26.5	18.0
28.0	19.0
29.5	20.1
31.0	21.1
32.5	22.1
34.0	23.1

a) Create a scatter plot of the data and determine the equation of the line of best fit.

b) Use your equation to predict the mass of the substance if it has a volume of 50 g.

c) Predict the volume of 5 g of the substance.